

# Operation Manual

## Pathfinder Matrix Switcher Series



**IN50000 Composite / S-Video Switchers**  
**IN60000 RGBS Switchers**





## Installation and Safety Instructions

### *For Models without a Power Switch:*

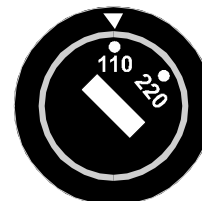
The socket outlet shall be installed near the equipment and shall be accessible.

### *For Models with 110 / 220V Power Selector:*

**Caution:** Before applying power to this unit, the voltage selector must be set to the appropriate setting to match local A/C line voltage. Improper setting of the voltage selector may cause damage to the unit and create a potential fire hazard.

The voltage selector is a round switch located next to the A/C power input connector which looks like this:

Using a straight slot screwdriver or small coin, rotate the selector to the correct position so that the arrow lines up with 110 or 220 as appropriate for local power line voltage as indicated in the chart below:



Local A/C Voltage	Voltage Selector Setting
110 ~ 120 VAC	110
220 ~ 240 VAC	220

### *For all Models:*

No serviceable parts inside the unit. Refer service to a qualified technician.

### *For Models with Internal or External Fuses:*

For continued protection against fire hazard, replace only with same type and rating of fuse.

### *For IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:*

**Caution:** Double pole / neutral fusing.

### *For all Models with Integral Lithium Battery:*

**Caution:** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



## Instructions d'installation et de sécurité

### *Pour les modèles sans interrupteur de courant:*

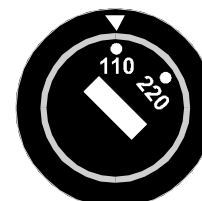
La prise de courant d'alimentation sera installé près de l'équipement et sera accessible.

### *Pour les modèles avec un sélecteur d'alimentation 110V/220V:*

**Attention:** Avant de connecter l'appareil au circuit d'alimentation, le sélecteur de courant doit être positionné sur la sélection appropriée correspondant au voltage du circuit de courant alternatif local. Une mauvaise sélection peut engendrer des dommages à l'appareil et créer un danger d'incendie.

Le sélecteur d'alimentation est un commutateur rond positionné près du connecteur d'alimentation. Il se représente comme suit:

A l'aide d'un tourne-vis plat ou d'une pièce de monnaie, le sélecteur peut être tourné dans la position adéquate en veillant que la flèche corresponde avec 110 ou 220, en fonction de la valeur du circuit de courant local. (Voir tableau ci-dessous)



Circuit local AC	Position Sélecteur
110 ~ 120 VAC	110
220 ~ 240 VAC	220

### *Pour tout les modèles:*

Pas de composants à entretenir à l'intérieur. Confiez toute réparation à un technicien qualifié.

### *Pour les modèles équipés de fusibles internes ou externes:*

Afin d'éviter tout danger d'incendie, ne remplacer qu'avec le même type et la même valeur de fusible.

### *Pour IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:*

**Attention:** Double pôle / fusible au neutre.

### *Pour tout les modèles avec une batterie au lithium interne:*

**Attention:** Danger d'explosion si la batterie est incorrectement remplacée. Ne remplacez la batterie qu'avec le même modèle, ou avec un modèle recommandé par le constructeur. Traitez les batteries usagées selon les instructions du fabricant, ou selon les normes écologiques en vigueur.



## Installations und Sicherheitshinweise

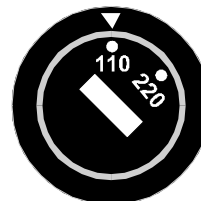
### Für Geräte ohne Netzschalter:

Die Netzsteckdose soll in der Nähe des Gerätes installiert und frei zugänglich sein.

### Für Geräte mit 110 / 220V Spannungswähler:

**Achtung:** Bevor Sie dem Gerät Spannung zuführen, muß der Spannungswähler entsprechend der Spannung des lokalen Wechselspannungsnetzes eingestellt werden. Die falsche Stellung des Spannungswählers kann eine Beschädigung des Gerätes und möglicherweise ein Feuer verursachen.

Der Spannungswähler ist ein runder Schalter in der Nähe der Netzeingangsbuchse mit folgendem Aussehen:



Drehen Sie den Wähler mit einem normalen Schraubenzieher oder einer kleinen Münze so, daß der Pfeil auf die 110 oder 220 zeigt, entsprechend der Spannung Ihres lokalen Netzes wie hier angezeigt:

Lokale Netzwechselspannung	Stellung des Spannungswählers
110 ~ 120 V	110
220 ~ 240 V	220

### Für alle Geräte:

Keine Wartung innerhalb des Gerätes notwendig. Reparaturen nur durch einen Fachmann!

### Für Geräte mit interner oder externer Sicherung:

Für dauernden Schutz gegen Feuergefahr darf die Sicherung nur gegen eine andere gleichen Typs und gleicher Nennleistung ausgetauscht werden.

### Für IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:

**Achtung:** Allpolige Absicherung

### Für alle Geräte mit eingebauter Lithium Batterie:

**Achtung:** Explosionsgefahr bei falschem Batterieeinsatz. Batterie nur einsetzen durch den gleichen oder entsprechenden Typ wie vom Hersteller empfohlen. Entsorgung verbrauchter Batterien nur nach den Anweisungen des Herstellers.



## Instalacion E Instrucciones de Seguridad

### Modelos Sin Interruptor:

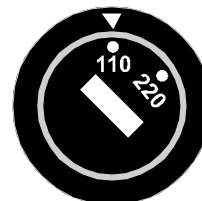
La conexión debe ser instalada cerca del equipo y debe ser accesible.

### Modelos con Selector de Voltaje de 110/220V:

**Precaución:** Antes de operar esta unidad, el selector de voltaje debe instalarse de forma que corresponda a la línea de voltaje local. Instalación inadecuada del selector de voltaje puede causar daño a la unidad y originar un incendio.

El selector de voltaje es un cambio vía redondo localizado cerca de la conexión eléctrica, como se ve en el dibujo:

Use un destornillador común o una moneda pequeña, mueva el selector a la posición correcta, de forma que las flechas indiquen 110 o 220 de acuerdo con el voltaje local, como está indicado a continuación.



Voltaje Local A/C	Selector de Voltaje
110 ~ 120 VAC	110
220 ~ 240 VAC	220

### Para Todos Los Modelos:

Dentro de la unidad, no hay partes para reparar. Llame un técnico calificado.

### Modelos con Fusibles Internos o Externos:

Para prevenir un incendio, reemplace solo con el mismo tipo de fusible.

### Modelos IN2001 / IN3234 / IN3236 / IN3502 / IN3504 / IN3506 / IN3562 / IN3564 / IN3566 / IN3572 / IN3574 / IN3576:

**Precaución:** Double Polo / Fusible Neutral.

### Modelos con Batería de Lithium Interna:

**Precaución:** Peligro de explosión si la batería es reemplazada incorrectamente. Reemplace solamente con la misma clase de batería, o una equivalente recomendada por el fabricante. Deseche las baterías usadas de acuerdo con las instrucciones del fabricante.

**CE COMPLIANCE**

All products exported to Europe by Inline, Inc. after January 1, 1997 have been tested and found to comply with EU Council Directive 89/336/EEC. These devices conform to the following standards:

EN50081-1 (1991), EN55022 (1987)

EN50082-1 (1992 and 1994), EN60950-92

**Shielded interconnect cables must be employed with this equipment to ensure compliance with the pertinent Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) standards governing this device.**

**FCC COMPLIANCE**

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide against harmful interference when equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.

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## PRODUCT OVERVIEW

### **Description:**

The PATHFINDER series switchers are designed to route multiple RGB and audio signals to multiple output devices. A typical installation may involve computers, monitors, large screen data projectors, VCR's and video cameras. PATHFINDER series switchers are commonly installed in board rooms, training centers, monitoring facilities, simulation systems and any other installation requiring comprehensive routing over multiple video and audio sources. PATHFINDER switchers are also integrated into rental and staging A/V systems for live presentations and shows.

### **Fixed Configuration vs. Reconfigurable Switchers**

The PATHFINDER series switchers are available in two basic varieties: Fixed and Reconfigurable.

#### **FIXED CONFIGURATION SWITCHERS**

Fixed configuration switchers have a pre-determined number of input and output ports. For example, an IN61204 is a fixed RGBS and stereo audio matrix switcher with a maximum of 12 input ports and 4 output ports. If fewer ports than the maximum ports are going to be used, the unit can be set as a 10 in, 3 out, for example, but could not be set for a 10 in, 6 out.

#### **RECONFIGURABLE SWITCHERS**

Re-configurable switchers offer flexibility in the number of input and output ports. The unit has a set number of ports, and these can be configured by the user for any combination of input and output ports as long as the total number does not exceed that available. For example, an IN60016 is a re-configurable RGBS and stereo audio matrix switcher with 16 ports. The unit can be set for any combination of inputs and outputs as long as (# input ports + # output ports ≤ 16). Thus, the unit could be set as a 14 x 2, 2 x 14, 8 x 8, 10 x 4, etc.

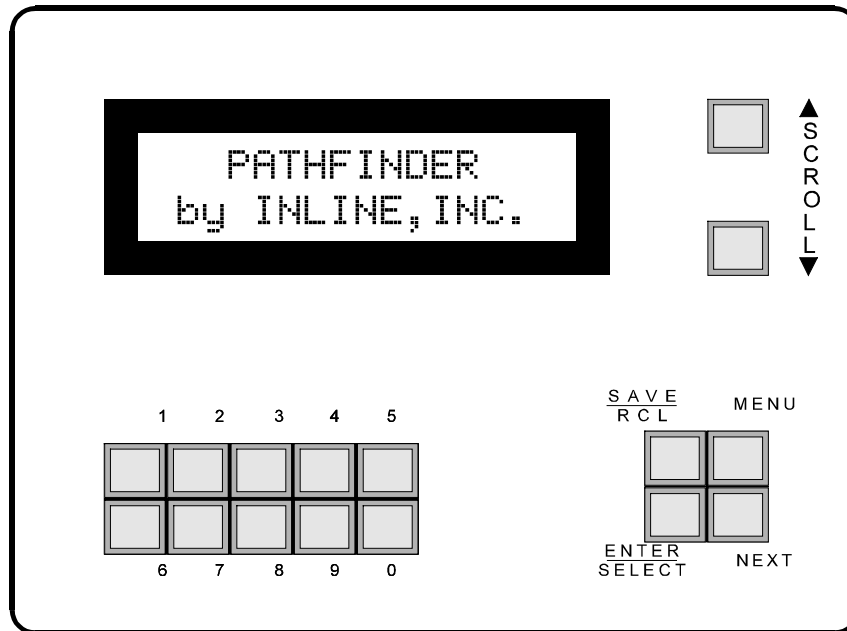
### **Model Numbers**

The model number of your unit denotes its type and configuration. The IN50000 series are composite video and stereo audio matrix switchers. The IN60000 series are RGBS and stereo audio matrix switchers, while the IN60000G series are RGBS matrix switchers (no audio).

The last four digits of the model number designate the number of input and output ports. The following table lists some model numbers and there descriptions as examples:

Model #	Description
IN50804	8 in, 4 out video and stereo audio switcher
IN50016	16 port re-configurable video and stereo audio switcher
IN61204	12 in, 4 out RGBS and stereo audio switcher
IN60808G	8 in, 8 out RGBS switcher
IN60016	16 port re-configurable RGBS and stereo audio switcher
IN60012G	12 port re-configurable RGBS switcher

## FRONT PANEL CONTROLS



**SCROLL UP & DOWN:** Scrolls through options available in various menu levels.

**SAVE/RECALL:** Saves or Recalls setup memories of the PATHFINDER. Also saves settings for various menus.

**MENU:** ..... Changes menus and exits operations.

**ENTER/SELECT:** ..... Confirms or selects an operation.

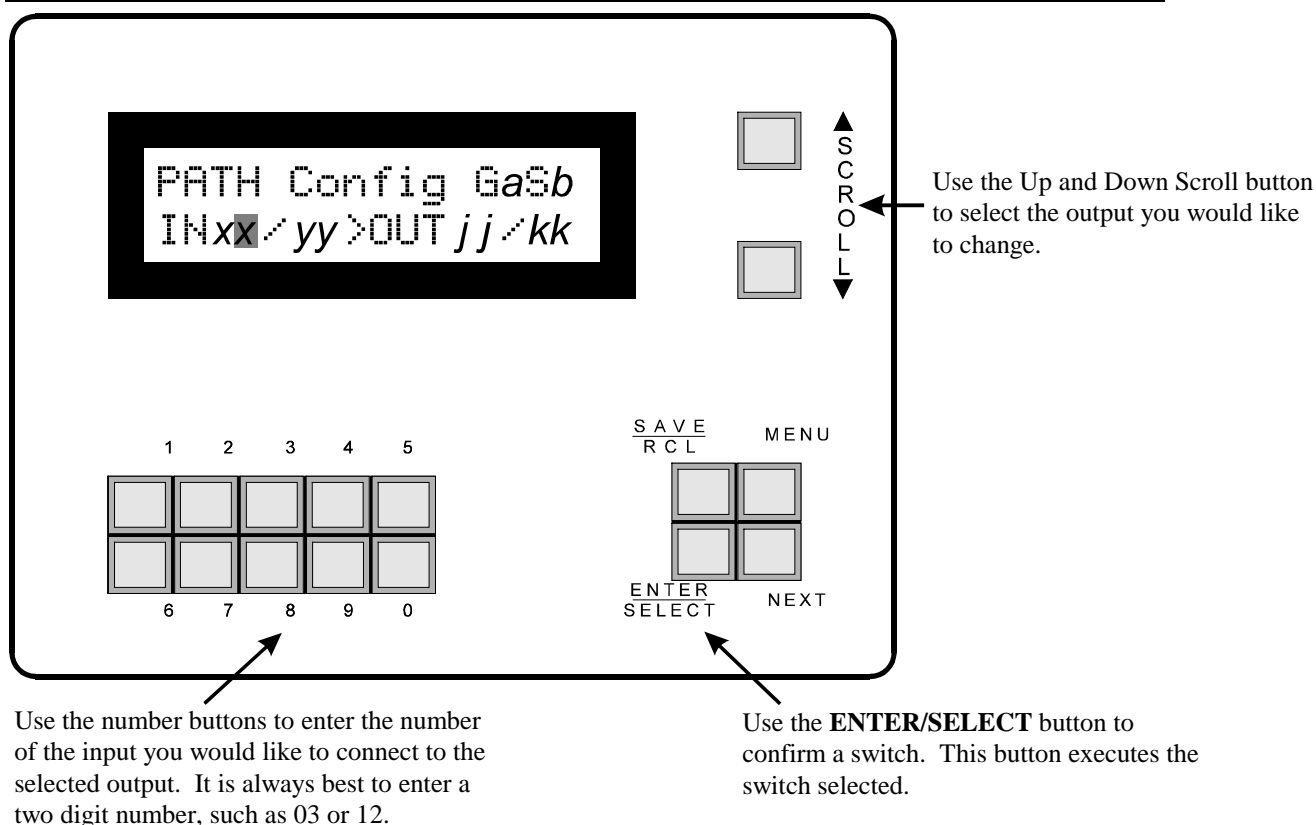
**NEXT:**..... Steps through menu items and/or options available in various menus.

**1, 2, 3, 4, 5, 6, 7, 8, 9, 0:** .. These buttons are used to enter numbers.

**STAND-BY:** ..... (Not pictured) This button enters and exits the Stand-by mode.  
(Note: The LED stays on all the time.)

## SWITCHING - CONNECTING INPUTS AND OUTPUTS (FRONT PANEL)

The switching menu is called the PATH Config menu, and it functions as follows:



The diagram above shows the LCD readout for the PATH Config menu. The actual readout will vary depending on the number of inputs and outputs your unit has. The bottom line of the LCD display shown above, `INxx/yy>OUTjj/kk`, reads as follows: Input *xx* of *yy* is connected to output *jj* of *kk*, where:

- Ga:** The selected group is Group *a*. *a* ranges from 1 to 6. (see Board Configuration on page 13 for more details.)
- Sb:** The selected setup memory is *b*. *b* ranges from 1 to 8 (see Saving and Recalling Setup Memories on page 5 for more details.)
- xx:** The selected input.
- yy:** The total number of inputs available.
- jj:** The selected output.
- kk:** The total number of outputs available.



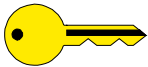
**Step 1: Select the Output:**

To make a connection between an input and an output, you scroll through each available output and then assign it an input. This may seem backwards at first, but when you think about it more carefully, you will see that it is not. A routing matrix switcher can have one input going to several outputs simultaneously, but an output can only have one input (unless you want to see multiple image on top of each other). Therefore, it is more logical to select the output and then the input you would like to connect to that output.

Use the **Up** and **Down** scroll buttons to select the output, *jj*, you would like to switch. The **Down** button selects the next output until you reach *kk*. After *kk*, the output selected begins at *01* again. The **Up** button selects the previous output.

**Step 2: Select the Input:**

Once the desired output is selected, you need to enter the number of the input you would like to connect to that output. You will notice that there is a blinking cursor over the input *xx* that is currently connected to output *jj*. The blinking cursor indicates that you can change this by using the number buttons to enter the desired input. It is always best to enter a two digit number, such as 03, 12, or 05. The number you can enter ranges from 00 to *yy* (Actually, you can enter any number from 00 to 99, but the switch will not execute if the number is greater than *yy*).

**KEY CONCEPT**

To blank an output, connect input 00 to that output. This disconnects the selected output, that is no input is connected to that output.

It is important to note that a switch is not executed until the **ENTER/SELECT** button is pushed. Therefore, if you punch in the wrong number, do not worry. All you have to do is re-enter the two digit number of the input you would like to connect to the selected output.

**Step 3: Execute the Switch:**

Now that you have selected the output and the input you want to connect to that output, you need to push the **ENTER/SELECT** button to execute the switch. This step is very important; otherwise, as soon as you select another output, the selected connection will be erased.

**Multiple Group Switching:**

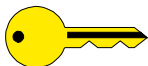
If you have configured your PATHFINDER with multiple groups (see Board Configuration on page 13 for more details), you will need to select the group prior to making a switch. In the previous diagram, *6a* shows the selected group number. When a switch is made with the front panel, the input to output connection is made to the boards in the current group only.

The **NEXT** button is used to select the next group. After the last group is reached, it returns to Group 1 (*01*).

## SAVING AND RECALLING SETUP MEMORIES

The PATHFINDER can store and recall up to 8 setup memories. A memory stores input to output connection information, and when recalled, executes all of the switch connections.

### KEY CONCEPT



When the PATHFINDER is turned on, it uses setup #1 as the default, and this cannot be changed. If you plan on turning off the PATHFINDER, make certain to store the initial settings in Setup #1.

### Saving a Setup Memory:

To save a memory configuration, make the desired input to output connections for all groups and then push the **SAVE/RECALL** button. The following screen will appear (Note: Changes must be made in order for the PATHFINDER to prompt you if you would like to Save the changes):

```
SAVE CHANGES  Sb
1>Y 2>N 3>SETUP#
```

You have three options to choose from, with **Sb** showing the current Setup being used. Press the appropriate number button as follows:

#### 1>Y:

Pressing the number **1** button saves the input to output connection information to Setup **#b**.

#### 2>N:

Pressing the number **2** button tells the PATHFINDER that you do not want to save the changes. As the **SAVE/RECALL** button is a single button for two functions (Save and Recall), the unit enters the Recall menu to allow you to recall a Setup memory (see Recalling a Setup Memory on page 6 for more details).

#### 3>SETUP#:

Pressing the number **3** button allows you to save the input to output connection information to any Setup memory. The following screen will appear:

```
SAVE CHANGES  Sb
Save to SETUP: b
```

The flashing cursor over **Setup: b** shows that you can change this with the number buttons. Press the number button of the Setup# you would like to store this information to. Confirm this selection by pressing the **ENTER/SELECT** button.

### **Recalling a Setup Memory:**

To recall a memory configuration, push the **SAVE/RECALL** button. One of two screens will appear depending on whether you made any input to output connection changes.

#### **No Changes Made:**

If no changes were made, the unit will prompt you to select a memory setup as follows:



The unit shows you the current setup #**b**, with a blinking cursor over the number. The blinking cursor indicates that you can change this by using the number buttons to enter the desired setup#. As there are eight setup memories, the PATHFINDER will only accept a number from 1 to 8. Confirm the number of the setup# you desire by pressing the **ENTER/SELECT** button.

#### **Changes Made:**

If you made any changes in the input to output connection configuration, the unit will first prompt you if you would like to save the changes (see Saving a Setup Memory on page 5 for more details). After pressing the number **2** button, the PATHFINDER will access the Recall Setup menu as shown above in the No Changes Made section.

## **FRONT PANEL MENUS**

The PATHFINDER front panel has two main sections for control: The PATH Config section and the MAIN MENU section, the latter being divided into seven sections. The MAIN Menu and its sections are described below:

### **Selection Between the PATH Config and MAIN MENU Sections:**

Pressing the **MENU** button alternates between the PATH Config and MAIN MENU sections. After power up, the PATHFINDER enters the PATH Config menu which allows you to make switch connections. By pressing the MENU button, the unit will switch to the MAIN MENU section, and the screen will look as follows:



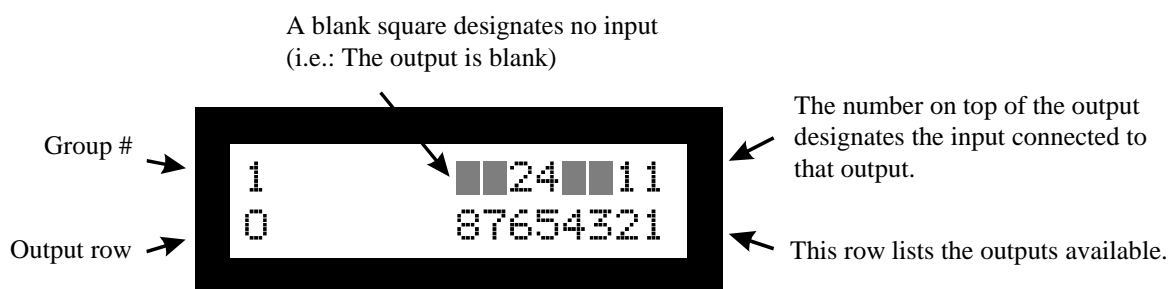
PATH Mapping is the first available section, followed by GROUP Mapping, RGB Delay, LCD Contrast Adj, RS-232 BAUD Rate, COMMAND Code, and Show SYSTEM Info. To scroll through the sections of the MAIN MENU, use the **Up** and **Down** Scroll buttons or the **NEXT** button. To enter one of the sections, push the **ENTER/SELECT** button, and that section's main screen will appear. A description of each of the seven sections follows:

## **PATH Mapping:**

The PATH Mapping section gives you visual feedback of how the PATHFINDER is configured, that is which inputs are connected to which outputs. Enter this sections by pressing the **ENTER/SELECT** button when the screen reads as follows:



The following screen will appear (although it will appear different for your unit):



The screen above shows an example for an 8 output PATHFINDER. The example has the following input and output configuration for Group 1:

- Input 1 to Outputs 1 and 2
- Input 4 to Output 5
- Input 2 to Output 6
- Input 0 to Outputs 3, 4, 7 & 8 (The outputs are blank)

Press the **MENU** button to exit this section.

### **KEY CONCEPT**



You can view the PATH Mapping display while in the PATH Config menu. Press and hold the **MENU** button, and then press the **UP** scroll button. The PATH Mapping display will show the current group as long as you hold the **UP** scroll button. This is very useful as a quick check of the switcher's setup.

## **Multiple Group Path Mapping:**

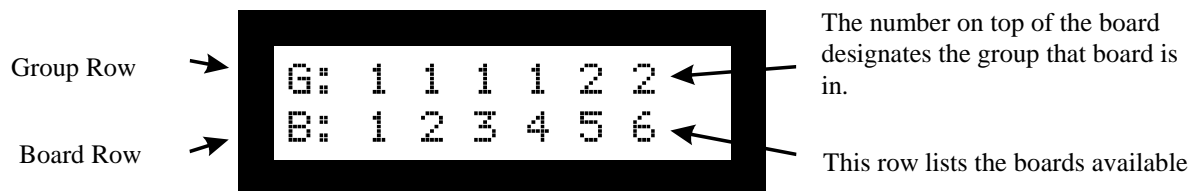
If you have configured your PATHFINDER with multiple groups (see Board Configuration on page 13 for more details), you can view the Path Mapping information display for all groups. To view the next group, push the **NEXT** button. You will see the Group# in the upper left corner change to the next group. After the last group, it will go back to Group# 1.

## **Group Mapping:**

The GROUP Mapping section gives you visual feedback of which boards are in which group (see Board Configuration on page 13 for more details). Enter this section by pressing the **ENTER/SELECT** button when the screen reads as follows:



The following screen will appear (although it may appear different for your unit):



The bottom row of numbers lists the boards available on the unit, where boards 1 - 6 are as follows:

Board #	Description
1	Red Video Board
2	Green Video Board
3	Blue Video Board
4	Sync Board
5	Audio Left Board
6	Audio Right Board

The screen above shows an example of a PATHFINDER set with two groups. Group 1 contains boards 1, 2, 3 and 4 (Red, Green, Blue and Sync), while Group 2 contains boards 5 and 6 (Audio Left and Right). By assigning the video and audio boards in two different groups, you can switch them independent of each other. You can "break away" the audio from the video.

Press the **MENU** button to exit this section.

### **RGB Delay:**

RGB Delay is a key feature of the PATHFINDER. It provides an adjustable delay time (0 to 6 seconds) between switching the sync and RGB boards. The sync signal is connected first and the RGB signals are blanked while the display device is allowed to lock up to the new signal.

KEY CONCEPT



RGB delay prevents the display device from showing re-sizing and other spurious on-screen effects which often occur while the display is adjusting to the new signal.

Enter this section by pressing the ENTER/SELECT button when the screen reads as follows:



The following screen will appear:



At 0.0 Seconds, the RGB and the sync will switch at the same time. To adjust the delay, use the **UP** and **DOWN** scroll buttons. The **UP** scroll button will increase the delay up to 6.0 Seconds in 0.5 second intervals. The **DOWN** scroll button decreases the delay time.

To exit this section with no change to the RGB Delay, press the **MENU** button. To activate the delay time you entered, press the **ENTER/SELECT** or **SAVE/RECALL** button as follows:

#### **ENTER/SELECT:**

Pressing the **ENTER/SELECT** button will temporarily store the RGB Delay setting until the power is turned off. This feature can be used to try different settings without overwriting the existing setting previously stored. Upon re-applying power to the PATHFINDER, the RGB Delay setting will return to its previously saved setting.

#### **SAVE/RECALL:**

Pressing the **SAVE/RECALL** button will save the RGB Delay setting in memory and will use it every time the unit is powered on. This setting will remain until you tell the unit to Save a different setting or reset the PATHFINDER to Factory Default (see Power On Settings on page 13 for more details).

**LCD Contrast Adjust:**

The LCD Contrast Adj. section allows you to adjust the contrast of the PATHFINDER's front panel LCD screen. Press the **ENTER/SELECT** button when the screen reads as follows:



The following screen will appear:



The **UP** Scroll button will increase the contrast while the **DOWN** Scroll button will decrease the contrast. When you have set the LCD screen to the desired contrast level, press the **MENU**, **ENTER/SELECT** or **SAVE/RECALL** button as follows:

**MENU or ENTER/SELECT:**

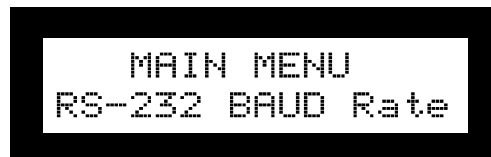
Pressing the **MENU** or **ENTER/SELECT** button will temporarily store the LCD Contrast setting until the power is turned off. Upon re-applying power to the PATHFINDER, the LCD Contrast setting will return to its previously saved setting.

**SAVE/RECALL:**

Pressing the **SAVE/RECALL** button will save the LCD Contrast setting in memory and will use it every time the unit is powered on. This setting will remain until you re-program the unit to Save a different setting or reset the PATHFINDER to Factory Default (see Power On Settings on page 13 for more details).

**RS-232 BAUD Rate:**

The RS-232 BAUD Rate section allows you to choose the baud rate at which the PATHFINDER's remote control port operates at. If you are not using a remote control device, such as a PC or a third party remote control system, you can ignore this section. However, if you are controlling the PATHFINDER remotely, you may need to change the baud rate to match that of the control device. The factory default setting is 1200 baud, and you can change this to 2400, 4800, 9600 or 19200 baud as required. Enter this section by pressing the **ENTER/SELECT** button when the screen reads as follows:



The following screen will appear (although it may appear different for your unit if it is already set for a baud rate other than 1200):



The asterisk, \*, in the bottom right hand corner of the display indicates that this baud rate is currently selected. To view the other rates available, press the **NEXT** button, and the baud rate will change to the next highest rate, which would be 2400bps for this example. You will notice that there is no asterisk for 2400, as this is not the current baud rate the PATHFINDER is set to use. Pressing the **NEXT** button again will increase the baud rate to 4800bps, then 9600bps, then 19200bps, and then back to 1200bps. When the desired baud rate is displayed, you can select it or exit with no change as follows:

**MENU:**

Pressing the **MENU** button exits this section with no change.

**ENTER/SELECT:**

Pressing the **ENTER/SELECT** button will temporarily store the Baud Rate setting until the power is turned off. Upon re-applying power to the PATHFINDER, the Baud Rate will return to its previously saved setting.

**SAVE/RECALL:**

Pressing the **SAVE/RECALL** button will save the Baud Rate setting in memory and will use it every time the unit is powered on. This setting will remain until you re-program the unit to Save a different setting or reset the PATHFINDER to Factory Default (see Power On Settings on page 13 for more details).

## **COMMAND Code:**

The **COMMAND Code** section allows you to choose the leading and ending characters of the actual protocol which the PATHFINDER will respond to. By choosing different Command Codes for multiple units, up to four PATHFINDERS can be controlled independently with one RS-232 serial port (Note: A RS-232 distribution amplifier must be used.) If you are not using a remote control device, such as a PC or a third party remote control system, you can ignore this section. Enter this section by pressing the **ENTER/SELECT** button when the screen reads as follows:





The following screen will appear (although it may appear different for your unit if it is already set for a different Command Code):



The asterisk in 1[\*] indicates that this Command Code is currently selected,. To choose a different Command Code, press the corresponding number button. For example, pressing the number **3** button will place the asterisk in 3[\*], choosing the parenthesis as the Command Code. When the desired Command Code is chosen, you can select it or exit with no change as follows:

**MENU:**

Pressing the **MENU** button exits this section with no change.

**ENTER/SELECT:**

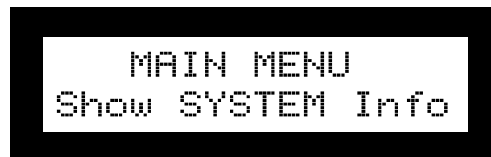
Pressing the **ENTER/SELECT** button will temporarily store the Command Code setting until the power is turned off. Upon re-applying power to the PATHFINDER, the Command Code will return to its previously saved setting.

**SAVE/RECALL:**

Pressing the **SAVE/RECALL** button will save the Command Code setting in memory and will use it every time the unit is powered on. This setting will remain until you re-program the unit to Save a different setting or reset the PATHFINDER to Factory Default (see Power On Settings on page 13 for more details).

**Show SYSTEM Info:**

The Show SYSTEM Info section displays information about your PATHFINDER. Enter this section by pressing the **ENTER/SELECT** button when the screen reads as follows:



The following screen will appear (although it may appear different for your unit depending on its configuration):



The screen above shows that the Firmware version of the unit is 2.0a, and the C/N# tells us that it is a 12 in, 4 out unit. The Configuration Number, C/N#, describes the unit and is set at the factory. Some examples are as follows:

C/N#	Model #	Description
06140101	IN60016	16 Port Reconfigurable Switcher
06001204	IN61204	12 in, 4 out Fixed Switcher
06000808	IN60808	8 in, 8 out Fixed Switcher

Press any button to exit this section.

## POWER-ON ADJUSTMENTS

The PATHFINDER utilizes Power-On adjustments to access critical parameters of the unit. To access a Power-On adjustment, you must hold down a specific button continuously while turning the unit's power switch to "ON" (if power is already on, the user can hold down the indicated button and switch the power off and then back on.)

### Reset to Factory Default:

To reset the unit to the factory default setting, hold down the number 1 button while turning on the unit. The factory default settings are as follows:

RGB Delay:	0.0 seconds
LCD Contrast:	Normal setting
RS-232 Baud Rate	1200
Command Code:	[ ]
Board Configuration:	Boards 1 - 6 in Group 1
I/O Configuration:	1 input active, 1 output active

### Board Configuration:

A PATHFINDER can have up to six boards: red board, green board, blue board, sync board, audio left board and audio right board. Boards can be assigned as a group and controlled together, with up to six groups definable by the user. Each group is treated as an independent switcher within the unit, and can even have its own unique number of Inputs and Outputs. The factory default is to have all boards assigned to Group 1.

One of the most common uses of assigning multiple groups is to switch audio independent of video. This can be accomplished by assigning boards 1 to 4 (red, green, blue and sync boards) to Group 1, and boards 5 and 6 (audio left and right boards) to Group 2. Now, Group 1 and Group 2 can be switched independent of each other.

To access the Board Configuration section, you must hold down the number 2 button while turning the unit on. The following screen will appear:



Enter this section by pressing the **ENTER/SELECT** button. The following screen will appear (although it may be different for your unit):



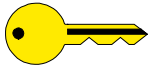
The screen above shows the boards currently assigned to Group 1. The factory default is to have all six boards assigned to Group 1, where:

Board #	Description
1	Red Video board
2	Green Video board
3	Blue Video board
4	Sync board
5	Left Audio board
6	Right Audio board

To assign different boards to Group 1, simply type the numbers of the boards you would like with the number buttons. For example, to assign boards 1, 2, 3 and 4 to Group 1, press the number button **1**, then **2**, then **3** and then **4**. Press the **ENTER/SELECT** button to confirm, or simply turn the unit off and try again if you accidentally type in the wrong numbers.

The screen will change to allow you to assign the boards for Group 2. Follow the same procedure until all boards are assigned to a Group. For example, to assign boards 5 and 6 to Group 2, press the number button **5** and then **6**, and confirm with the **ENTER/SELECT** button.

#### KEY CONCEPT



Each board can be assigned to only one Group. For example, you cannot assign boards 1, 2, 3 and 4 to Group 1; boards 5 and 6 to Group 2; and boards 1, 2, 3, 4, 5 and 6 to Group 3.

In our example, we are done assigning groups as all 6 boards have been assigned to a group. However, the PATHFINDER will still prompt you for Groups 3 - 6. Do not assign boards to another Group as this will cause conflict in the program. Proceed through all other groups by pressing the **ENTER/SELECT** button. After Group 6, the unit will save the information and automatically send you into the I/O Config section.

### I/O Configuration:

To access the I/O Configuration section, you must hold down the number 3 button while turning the unit on. The following screen will appear:



Enter this section by pressing the **ENTER/SELECT** button. The following screen will appear (although it may be different for your unit):



G1 indicates you are setting the I/O configuration for Group 1. The current setting is 1 active output out of a possible 4 outputs.

#### **Exit With No Change:**

You can Exit with no change at any time by pressing the **MENU** button or simply turning the unit off

#### **Step 1: Select the Number of Outputs:**

Use the Keypad to enter a two digit number corresponding to the number of desired outputs. For example, to set 4 outputs, press the number buttons **04**. If you accidentally type in the wrong number, simply re-type the two digit number.

Confirm your entry by pressing the **ENTER/SELECT** button. The following screen will appear (although it may be different for your unit):



G1 indicates you are setting the I/O configuration for Group 1. The current setting is 1 active input out of a possible 12 inputs.

#### **Step 2: Select the Number of Inputs:**

Use the Keypad to enter a two digit number corresponding to the number of desired inputs. For example, to set 12 inputs, press the number buttons **12**. If you accidentally type in the wrong number, simply re-type the two digit number.

Confirm your entry by pressing the **ENTER/SELECT** button.

#### **Step 3: Other Groups:**

If you have configured your unit with more than 1 Group, proceed with assigning the number of Inputs and Outputs for the other groups as in steps 1 and 2.

When you reach an I/O Configuration for a Group that does not have any boards assigned to it, the screen will read **Undefined**. Proceed through all other groups by pressing the **ENTER/SELECT** button.

After Group 6, the screen will say **DONE** and the **PATHFINDER** will save the information. The unit will then reset itself and go into the **PATH Config** section.

## USING RS-232 CONTROL

The PATHFINDER has two 9 pin RS-232 ports which will accept serial commands from a control system, computer serial port, or any other device capable of sending out serial ASCII commands at compatible baud rates. All switching, configuration and set-up parameters can be controlled using RS-232 commands. A few functions cannot be accomplished from the front control panel and are available *only* through RS-232 control:

- Load and Switch All Output Ports
- Executive Mode: Disable Access to Configuration Menus from the Front Control Panel
- Getting Firmware Information on the Microcontroller

Details on the commands above and a complete listing of RS-232 codes is included on pages 18 and 19.

### **Communication Protocol:**

The baud rate that the PATHFINDER operates is selectable from 1200 to 19,200 baud (see RS-232 BAUD Rate on page 10). Communication parameters are as follows:

- 1200 baud (Factory default setting)
- No Parity
- 8 data bits
- 1 stop bit

### **Protocol Structure:**

All commands sent to the unit must contain a leading character, the actual command, and an ending character. Each command must be completely executed by the PATHFINDER before it will accept a new command. When a command is executed, the unit provides the response [OK] to indicate that the command was received and executed. Do not send a new command until the [OK] is received, otherwise there may be a conflict. The response [ERR] indicates that there was a problem and the command was not executed.

The PATHFINDER can recognize one of four sets of leading and ending characters, also called the Command Codes. These are: [ ] { } ( ) < >. The factory default for the Command Code is [ ]. The Command code can be changed from the Front Control Panel (see Command Code on page 11)

A complete command string consists of:

[	The leading character
CALL2	The actual command.
]	The ending character

Some sample command codes follow:

[CALL1]	Recall setup memory 1
[RGB3.0]	Set RGB Delay to 3 seconds

## **Controlling Multiple INLINE Products:**

Many INLINE products such as the PATHFINDER, the IN1222/IN1240/IN1422 scan doublers and the IN1510/IN1540/IN1710 decoders use similar communication protocol structures. By setting each unit to a different Command Code, up to four INLINE products can be controlled independently by a single RS-232 serial control port (Note: A RS-232 distribution amplifier may be required.)

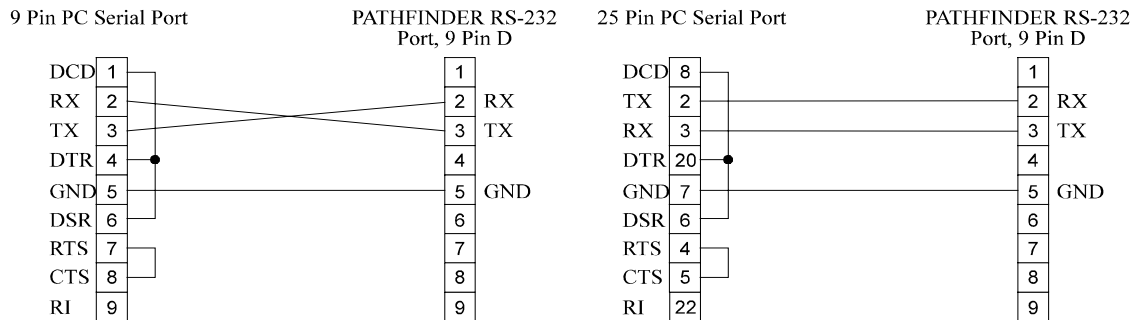
## **RS-232 Port Pin-outs:**

There are two RS-232 ports on the PATHFINDER. There is a 9 pin D female connector on the front of the unit, and a 9 pin D male connector on the back. Only one port can be used at a time as both ports are wired in parallel. If you are using a port to loop out to another device, a RS-232 buffer may be required.

Both ports have the same pin-outs as follows:

<u>Pin #</u>	<u>Signal</u>
2	Receive
3	Transmit
5	Ground

When using a PC to control the PATHFINDER, you may need to tie certain pins together on the computer side to activate the serial port. If these pins are not tied together, the serial port will not be active, so no strings will be sent. The following diagram shows the pins that need to be tied together:



COMMAND <sup>1</sup>	DESCRIPTION	RESPONSE
ACI3 *	Set to 1200 baud rate, <i>default setting</i>	[OK]
ACI4 *	Set to 2400 baud rate	[OK]
ACI5 *	Set to 4800 baud rate	[OK]
ACI6 *	Set to 9600 baud rate	[OK]
ACI7 *	Set to 19200 baud rate	[OK]
CALLs	Recall configuration from SETUPs s: 1 byte ASCII code, ranges from 1 - 8	[OK]
SAVEs	Save current configuration to SETUPs s: 1 byte ASCII code, ranges from 1 - 8	[OK]
SAVE0	Save Global setting(s)	[OK]
PTgOmmInn	Execute a switch. Connect Input <i>nn</i> to Output <i>mm</i> for Group <i>g</i> . g: Group #, a 1 byte ASCII code, ranges from 1 - 6 nn: Input #, a 2 byte ASCII code. If nn = 00, no input is selected, resulting in a blank output. mm: Output #, a 2 byte ASCII code <b>Exp:</b> "[PT1O08I04]" Connect Input #4 to Output #8 for the boards in Group 1	[OK]
Lgo1o2o3...	Load a new path for Group <i>g</i> . The switch is not executed until the "[SW]" command is sent. on: 2 byte ASCII code representing the Input# to be connected to output #n. <b>Exp1:</b> "[L104050003]" Load a new path for Group #1 as follows: Input #4 to Output #1, Input #5 to Output #2, Input #0 to Output #3 (disconnect), and Input #3 to Output #4. <b>Exp2:</b> "[L1020101,L2101107]" Load a new path for Group #1 as follows: Input #2 to Output #1, Input #1 to Output #2, Input #1 to Output #3. Load a new path for Group #2 as follows: Input #10 to Output #1, Input #11 to Output #2, Input #7 to Output #3	[OK]
SW	Execute all switch connections as defined by the L command.	[OK]
RGBx.x	Set RGB delay to x.x seconds. x.x: ranges from 0.0 to 6.5 in 0.5 second intervals. <b>Exp:</b> "[RGB3.5]" Set RGB delay to 3.5 seconds. Note: Normally, the RGB delay is only used when boards 1, 2, 3 & 4 are all in the same group. However, the RS-232 command sets the unit so that it ignores this fact. Therefore, if you do not assign boards 1, 2, 3 & 4 to the same group, you MUST set the RGB delay to 0.0 seconds to ensure proper switching (with no delays.)	[OK]
GgBb1b2b3...	Set boards <i>b1</i> , <i>b2</i> , <i>b3</i> ... to group <i>g</i> <b>Exp:</b> "[G1B1234]" Define Group 1 as boards 1, 2, 3 & 4	[OK]
IOgOoli	Set input/output configuration for group <i>g</i> <b>Exp:</b> "[IO1O04I12]" Define Group 1 input/output configuration as 4 outputs and 12 inputs.	[OK]
FP *	Enable and disable the front panel operation (toggle between FP0 and FP1.	[OK]
FP0 *	Disable the front panel operation (put the unit into the Stand-by mode). All front panel buttons are disabled, except for the Stand-by button, and the backlight of the LCD screen is turned off.	[OK]
COMMAND <sup>1</sup>	DESCRIPTION	RESPONSE

<sup>1</sup> Leading and ending codes not shown for clarity.

\* Global Settings (Save with SAVE0 Command)

FP1	*	Enable the front panel operation (take the unit out of the Stand-by mode and Executive mode).	[OK]
FP2	*	Executive mode. Disable access to configuration menus from the front panel (Path Config, RGB delay, RS-232 baud rate, and Command code).	[OK]
INF0		Get the firmware version	[PATHFINDER V2.0a]
INF1		Get the Configuration Number (C/N).	Varies with model #

<sup>1</sup> Leading and ending codes not shown for clarity.

\* Global Settings (Save with SAVE0 Command)

## SPECIFICATIONS

<b>RGBS Input:</b>	
Connectors	(4) Female BNC
Impedance	75 Ohms
RGB Level	0.7 Vp-p Nominal, 2 Vp-p maximum
Sync Level	5 V maximum
Coupling	DC coupled. Any input signal DC offset should be limited to $\pm 0.5$ VDC to allow for an acceptable signal swing without distortion.
<b>Audio Input</b>	
Connectors	(2) Female RCA
Impedance	620 Ohms
Level	Line Level
<b>RGBS Output:</b>	
Connectors	(4) Female BNC
Impedance	75 Ohms
Bandwidth	120 MHz
RGB Gain	$1.0 \pm 5\%$
Sync Output:	$1.0 \pm 5\%$ Gain into 75 Ohms, 4 V maximum
<b>Audio Output:</b>	
Audio Connectors	(2) Female RCA
Audio Impedance	620 Ohms
Gain:	$1.0 \pm 5\%$
Bandwidth:	50 MHz
<b>General:</b>	
Power:	96 - 260 VAC, 40 to 60 Hz
Power Consumption:	35W Max.
Size:	17"W x 11.5"D x 5.25"H
Weight:	20 lbs.



## WARRANTY

- ◆ INLINE warrants the equipment it manufactures to be free from defects in materials and workmanship.
- ◆ If equipment fails because of such defects and INLINE is notified within two (2) years from the date of shipment, INLINE will, at its option, repair or replace the equipment at its plant, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications.
- ◆ Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of re-shipment to the Buyer.
- ◆ **This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.**

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